What is claimed is:

1. An area designing apparatus for a mobile communication system, comprising:

means for placing a plurality of communicating mobile stations corresponding to traffic distribution information;

means for deciding a base station to which each of the mobile stations is radio linked;

means for calculating a transmission power of a desired wave signal that each base station transmits to each of the mobile stations that are radio linked thereto;

means for successively selecting one from a plurality of evaluation positions in a state that each of the base stations is transmitting the desired wave signals; and

means for calculating a reception power of a desired wave signal that an evaluation mobile station placed at each selected evaluation position receives from the base station that is radio linked thereto and reception powers of interference wave signals that the evaluation mobile station receives from the base station that is radio linked thereto and from each of the other base stations,

wherein communication quality at each evaluation position is evaluated corresponding to the calculated reception power of the desired wave signal and the calculated reception powers of the interference wave

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signals.

2.   The area designing apparatus as set forth in claim 1,

wherein a random deviation amount is added to a propagation loss of

a signal transmitted between the evaluation mobile station placed at each

evaluation position and each base station,

wherein corresponding to the resultant propagation loss, the

reception power of the desired wave signal and the reception powers of the

interference wave signals are calculated so as to evaluate the

communication quality at each evaluation position, and

wherein the evaluation of the communication quality is repeated and

the ratio that represents the number of evaluation results that do not

satisfy a predetermined level is obtained.

3.   The area designing apparatus as set forth in claim 1,

wherein the communication quality at each evaluation position in an

area that contains some of the plurality of evaluation positions is evaluated,

and

wherein a ratio that represents the number of evaluation results at

the evaluation positions in the area do not satisfy a predetermined level is

obtained.

4.   The area designing apparatus as set forth in claim 1,

wherein the evaluation positions are decided so that some of the

plurality of evaluation positions are formed in a regular polygon shape.

5.   The area designing apparatus as set forth in claim 1, further

comprising:

means for displaying the communication quality at each evaluation

position with visual information.

6.   The area designing apparatus as set forth in claim 2, further

comprising:

means for displaying the ratio that represents evaluation results that

do not satisfy a predetermined level with the visual information.

7.   The area designing apparatus as set forth in claim 1, further

comprising:

means for inputting the traffic distribution information;

means for storing the input traffic distribution information; and

means for outputting the visual information.

8.   An area designing apparatus for a mobile communication system,

comprising:

means for placing a plurality of communicating mobile stations corresponding to traffic distribution information;

means for deciding a base station to which each of the mobile stations is radio linked;

means for calculating a transmission power of a desired wave signal that each of the mobile stations transmits to the base station that is radio linked thereto;

means for successively selecting one from a plurality of evaluation positions in a state that each of the plurality of mobile stations is transmitting the desired wave signal;

means for calculating a reception power of a desired wave signal that the base station that is radio linked to an evaluation mobile station placed at each selected evaluation position receives from the evaluation mobile station and reception powers of interference wave signals that the base station that is radio linked to the evaluation mobile station receives from the mobile stations other than the evaluation mobile station,

wherein the communication quality at the evaluation position is evaluated corresponding to the calculated reception power of the desired wave signal and the calculated reception powers of the interference wave signals.

9.  The area designing apparatus as set forth in claim 8,

wherein a random deviation amount is added to a propagation loss of

a signal transmitted between the evaluation mobile station placed at each

evaluation position and each base station,

wherein corresponding to the resultant propagation loss, the

reception power of the desired wave signal and the reception powers of the

interference wave signals are calculated so as to evaluate the

communication quality at each evaluation position, and

wherein the evaluation of the communication quality is repeated and

the ratio that represents the number of evaluation results that do not

satisfy a predetermined level is obtained.


10. The area designing apparatus as set forth in claim 8,

wherein the communication quality at each evaluation position in an

area that contains some of the plurality of evaluation positions is evaluated,

and

wherein a ratio that represents the number of evaluation results at

the evaluation positions in the area do not satisfy a predetermined level is

obtained.


11. The area designing apparatus as set forth in claim 8,

wherein the evaluation positions are decided so that some of the

plurality of evaluation positions are formed in a regular polygon shape.

12.　　The area designing apparatus as set forth in claim 8, further comprising:

means for displaying the communication quality at each evaluation position with visual information.

13.　　The area designing apparatus as set forth in claim 9, further comprising:

means for displaying the ratio that represents evaluation results that do not satisfy a predetermined level with the visual information.

14.　　The area designing apparatus as set forth in claim 8, further comprising:

means for inputting the traffic distribution information;

means for storing the input traffic distribution information; and

means for outputting the visual information.

15.　　An area designing method for a mobile communication system, comprising steps of:

placing a plurality of communicating mobile stations corresponding to traffic distribution information;

deciding a base station to which each of the mobile stations is radio

linked;

calculating a transmission power of a desired wave signal that each base station transmits to each of the mobile stations that are radio linked thereto;

5    successively selecting one from a plurality of evaluation positions in a state that each of the base stations is transmitting the desired wave signals; and

calculating a reception power of a desired wave signal that an evaluation mobile station placed at each selected evaluation position

10    receives from the base station that is radio linked thereto and reception powers of interference wave signals that the evaluation mobile station receives from the base station that is radio linked thereto and from each of the other base stations,

wherein communication quality at each evaluation position is

15    evaluated corresponding to the calculated reception power of the desired wave signal and the calculated reception powers of the interference wave signals.

16.    The area designing method as set forth in claim 15,

20    wherein a random deviation amount is added to a propagation loss of a signal transmitted between the evaluation mobile station placed at each evaluation position and each base station,

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wherein corresponding to the resultant propagation loss, the reception power of the desired wave signal and the reception powers of the interference wave signals are calculated so as to evaluate the communication quality at each evaluation position, and

5      wherein the evaluation of the communication quality is repeated and the ratio that represents the number of evaluation results that do not satisfy a predetermined level is obtained.

17.   The area designing method as set forth in claim 15,

10      wherein the communication quality at each evaluation position in an area that contains some of the plurality of evaluation positions is evaluated, and

wherein a ratio that represents the number of evaluation results at the evaluation positions in the area do not satisfy a predetermined level is

15   obtained.

18.   The area designing method as set forth in claim 15,

wherein the evaluation positions are decided so that some of the plurality of evaluation positions are formed in a regular polygon shape.

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19.   The area designing method as set forth in claim 15, further comprising:

a step of displaying the communication quality at each evaluation position with visual information.

20. The area designing method as set forth in claim 16, further comprising:

a step of displaying the ratio that represents evaluation results that do not satisfy a predetermined level with the visual information.

21. The area designing method as set forth in claim 15, further comprising steps of:

inputting the traffic distribution information;

storing the input traffic distribution information; and

outputting the visual information.

22. An area designing method for a mobile communication system, comprising steps of:

placing a plurality of communicating mobile stations corresponding to traffic distribution information;

deciding a base station to which each of the mobile stations is radio linked;

calculating a transmission power of a desired wave signal that each of the mobile stations transmits to the base station that is radio linked

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thereto;

successively selecting one from a plurality of evaluation positions in a state that each of the plurality of mobile stations is transmitting the desired wave signal;

5 calculating a reception power of a desired wave signal that the base station that is radio linked to an evaluation mobile station placed at each selected evaluation position receives from the evaluation mobile station and reception powers of interference wave signals that the base station that is radio linked to the evaluation mobile station receives from the mobile

10 stations other than the evaluation mobile station,

wherein the communication quality at the evaluation position is evaluated corresponding to the calculated reception power of the desired wave signal and the calculated reception powers of the interference wave signals.

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23. The area designing method as set forth in claim 22,

wherein a random deviation amount is added to a propagation loss of a signal transmitted between the evaluation mobile station placed at each evaluation position and each base station,

20 wherein corresponding to the resultant propagation loss, the reception power of the desired wave signal and the reception powers of the interference wave signals are calculated so as to evaluate the

communication quality at each evaluation position, and

wherein the evaluation of the communication quality is repeated and the ratio that represents the number of evaluation results that do not satisfy a predetermined level is obtained.

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24. The area designing method as set forth in claim 22,

wherein the communication quality at each evaluation position in an area that contains some of the plurality of evaluation positions is evaluated, and

10     wherein a ratio that represents the number of evaluation results at the evaluation positions in the area do not satisfy a predetermined level is obtained.

25. The area designing method as set forth in claim 22,

15     wherein the evaluation positions are decided so that some of the plurality of evaluation positions are formed in a regular polygon shape.

26. The area designing method as set forth in claim 22, further comprising:

20     a step of displaying the communication quality at each evaluation position with visual information.

27.    The area designing method as set forth in claim 23, further comprising:

a step of displaying the ratio that represents evaluation results that do not satisfy a predetermined level with the visual information.

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28.    The area designing method as set forth in claim 22, further comprising steps of:

inputting the traffic distribution information;

storing the input traffic distribution information; and

10      outputting the visual information.